Complete Summary

GUIDELINE TITLE

Care of the patient with learning related vision problems.

BIBLIOGRAPHIC SOURCE(S)

American Optometric Association. Care of the patient with learning related vision problems. St. Louis (MO): American Optometric Association; 2000 Jan 1. 60 p. (Optometric clinical practice guideline; no. 20). [141 references]

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Learning related vision problems

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management

CLINICAL SPECIALTY

Optometry

INTENDED USERS

Health Plans
Optometrists

GUIDELINE OBJECTIVE(S)

- To diagnose visual information processing problems
- To improve the quality of care provided to patients with learning related vision problems
- To select appropriate evaluation instruments to evaluate learning related vision problems
- To select appropriate management strategies for patients with learning related vision problems
- To minimize the adverse effects of learning related vision problems and enhance quality of life
- To inform and educate other health care professionals, parents, teachers, and the educational system about the nature of learning related vision problems and the availability of treatment

TARGET POPULATION

School-age children with learning related vision problems

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis

1. Patient history
2. Visual efficiency evaluation
    - Visual acuity
    - Refraction
    - Ocular motility and alignment
    - Accommodative-vergence function
    - Physical diagnosis
3. Visual information processing evaluation
    - Visual spatial orientation skills
    - Visual analysis skills
    - Visual-verbal integration
4. Supplemental testing
    - Reading and spelling
    - Magnocellular pathway function

Treatment

1. Refractive correction
2. Vision therapy
3. Lenses and prisms
4. Referral

MAJOR OUTCOMES CONSIDERED

None stated

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The guideline developer performed literature searches using the National Library of Medicine's Medline database and the VisionNet database.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus (Committee)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not applicable

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The Reference Guide for Clinicians was reviewed by the American Optometric Association (AOA) Clinical Guidelines Coordinating Committee and approved by the AOA Board of Trustees.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Excerpted by the National Guideline Clearinghouse (NGC)

Early Detection

Because the evidence that learning related vision problems can be prevented to any substantial degree is inconclusive, the emphasis is on early detection. It is recommended that vision examinations be scheduled at 6 months, 3 years of age, and at entry into school, at which time the parents should complete a developmental questionnaire. If there is a history of developmental delay, a screening test like the Denver Developmental Screening Test can be performed. When visual information processing problems are suspected, a more extensive evaluation is necessary for the early identification of the child at risk for the development of learning related vision problems.

Care Process

A. General Considerations

Care of the patient with learning related vision problems involves taking a patient history and examining visual efficiency, visual information processing ability, and visual pathway integrity. The Optometric Clinical Practice Guideline for the Pediatric Eye and Vision Examination (St. Louis [MO]: American Optometric Association [AOA]; 1994. 46 p. [Optometric clinical practice guideline; no. 2]) should be consulted for additional information.

B. Patient History

The patient history is the initial component of the care process and an important part of an appropriate diagnosis. Collection of demographic data usually precedes and supplements the history taking. A questionnaire completed by the parent or caregiver can facilitate the history process. Special attention should be directed to developmental milestones and academic performance. Questions should be constructed to define the specific nature of the learning and vision problems and should be used as a guide for the subsequent testing sequence. Information obtained directly from teachers or therapists can be helpful.

Language delays are common in individuals with learning problems. As a result, sufficiently detailed descriptions of learning or visual symptoms obtained directly from the patient may be lacking. This could result in an underestimation of the severity of the symptoms and should not be the exclusive source of such information.

A comprehensive patient history for learning related vision problems may include:

1. Chief concern or complaint
2. History of present illness (e.g., patient visual or ocular history)
3. Patient medical history (e.g., risk factors, perinatal events, childhood illnesses)
4. Developmental history (e.g., gross motor, fine motor, language, milestones)
5. Family history (e.g., visual/ocular, medical, academic/educational)
6. Academic/educational history (e.g., previous assessments and interventions, current assessment, interventions and placement, current achievement levels, academic/education-related medical history)

C. Visual Efficiency Evaluation

Visual efficiency problems are related to learning achievement. An analysis of the literature on the subject indicates that refractive error -- in particular hyperopia and significant anisometropia, accommodative and vergence dysfunctions, and eye movement disorders -- are associated with learning problems. Therefore, a thorough clinical investigation for the presence of these conditions in the individual with learning problems is important.

Though they are extremely important functional vision disorders to diagnose and treat early, other binocular vision disorders such as constant strabismus and amblyopia, have not been found to be associated with learning problems.

Some patients with visual information processing deficiencies, particularly deficiencies of discrimination and memory, may have difficulty making reliable responses during subjective testing. The clinician may have to make necessary compensations or use alternative testing procedures to obtain relevant information. Reliance on objective findings for clinical decision-making may be necessary.

1. Visual Acuity

   Assessment of visual acuity in patients with learning related vision problems should be measured monocularly and binocularly at distance and near point. Patients with sufficient verbal communication who know the alphabet can be tested using a Snellen chart. If difficulties are encountered, an assessment of visual acuity may include the following methods:

   - HOTV
   - Broken Wheel
   - Tumbling E

   The Optometric Clinical Practice Guideline for the Pediatric Eye and Vision Examination (St. Louis [MO]: American Optometric Association [AOA]; 1994. 46 p. [Optometric clinical practice guideline; no. 2]) should be consulted for additional information.

2. Refraction

The measurement of refractive error should include:

- Static retinoscopy
- Subjective refraction

Because of the importance of detecting hyperopia -- particularly latent hyperopia -- proper fogging technique should be maintained during retinoscopy and subjective refraction. A cycloplegic refraction may be indicated if latent hyperopia or pseudomyopia is suspected, or if convergence excess or accommodative insufficiency is diagnosed.

3. Ocular Motility and Alignment

Ocular motility is typically evaluated by chair side tests of fixation stability, and of saccadic and smooth pursuit eye movements. In addition to investigation of basic neurological and extraocular muscle function in patients with learning related vision problems, qualitative analysis of their ocular motility is necessary.

The following standardized observational rating systems have been developed:

- NSUCO (Northeastern State University College of Optometry)
- SCCO 4+ (Southern California College of Optometry)

For smooth pursuit testing, both of these systems involve tracking a target moving in a circle. Evaluation of performance is by gain (eye velocity in relation to target velocity) and the number of catch-up saccades to reacquire the target.

Both systems investigate predictive saccades between two fixed targets positioned centrally, equidistant from the midline. Hypometric inaccuracies are commonly found in individuals with poor saccadic eye movement control. Ocular motility deficiencies are frequently accompanied by excessive head and body movements (motor overflow). The clinical signs and symptoms of ocular motility deficiencies can be found in "Signs and Symptoms of Ocular Motility Dysfunction," below.

Signs and Symptoms of Ocular Motility Dysfunction

- Moving head excessively when reading
- Skipping lines when reading
- Omitting words and transposing words when reading
- Losing place when reading
- Requiring finger or marker to keep place when reading
- Experiencing confusion during the return sweep phase of reading
- Experiencing illusory text movement

- Having deficient ball-playing skills

Assessment tools are available for a more quantitative evaluation, albeit indirect, of saccadic eye movements. The following available tests, which are norm-referenced for the patient's age and grade in school, clearly indicate the developmental course of skill improvement:

- Developmental Eye Movement Test (DEM)
- King-Devick Saccade Test (K-D)

Unfortunately, naming tasks confound the results because both eye movement skill and naming speed are required to complete the test successfully. However, because the Developmental Eye Movement Test incorporates a subtest of naming speed that isolates eye movement skill for a more specific clinical diagnosis, it's use is preferred.

Infrared eye-monitoring systems that directly measure eye movements during reading (e.g., Visagraph II) are also available. Although they do not measure saccade dynamics (accuracy, latency) or main sequence, these assessment tools can provide data on the number of fixations required to read a sample of text, as well as the number of regressions and the reading rate.

Eye alignment is usually determined by a distance and near cover test. If a strabismus is found, the Optometric Clinical Practice Guideline for the Care of the Patient with Strabismus: Esotropia and Exotropia (St. Louis [MO]: American Optometric Association; 1995. 69 p. [Optometric clinical practice guideline; no. 12]) should be consulted for additional information.

4. Accommodative-Vergence

Evaluation of accommodation and vergence amplitude, facility, accuracy, consistency, and sustainability is required and may include the following procedures or measurements:

- Cover test
- Near point of convergence
- Heterophoria, distance and near
- Fusional vergence amplitudes, distance and near
- Vergence facility
- Amplitude of accommodation
- Accuracy of accommodation (lag)
- Relative accommodation
- Accommodative facility
- Fixation disparity analysis
- Stereopsis

The evaluation of accommodation and vergence should include assessment of both the range and facility of response. The clinical signs and symptoms of accommodative and vergence dysfunctions can

be found in "Signs and Symptoms of Accommodative - Vergence Dysfunctions," below. The Optometric Clinical Practice Guideline for the Care of the Patient with Accommodative and Vergence Dysfunction (St. Louis [MO]: American Optometric Association; 1997. 89 p. [Optometric clinical practice guideline; no; 18]) provides information for a more detailed assessment.

Signs and Symptoms of Accommodative - Vergence Dysfunctions

- Asthenopia when reading or writing
- Headaches associated with near visual tasks
- Blurred vision at distance or near
- Diplopia
- Decreased attention for near visual tasks
- Close near working distance
- Overlapping letters/words in reading
- Burning sensations or tearing of the eyes during near visual tasks

5. Physical Diagnosis

The assessment of visual system integrity should include:

- Evaluation of the anterior segment
- Evaluation of the posterior segment
- Color vision testing
- Assessment of pupillary responses
- Visual field screening

Standard testing procedures for the evaluation of visual system integrity can be used in patients with learning related vision problems. For additional information consult the Optometric Clinical Practice Guideline for the Pediatric Eye and Vision Examination (St. Louis [MO]: American Optometric Association [AOA]; 1994. 46 p. [Optometric clinical practice guideline; no. 2]).

D. Visual Information Processing Evaluation

1. General Considerations

The visual information processing skills that require testing are visual spatial orientation skills, visual analysis skills, including auditory-visual integration, visual-motor integration skills, and visual-verbal integration skills. When available, norm-referenced tests are preferred for this purpose. Testing should be conducted uniformly and according to the exact methods specified in the test instructions. Specified rule-based scoring procedures should be followed. Qualitative insights from observation of the test taker's behavior can provide important supplementary information for diagnosis and management. Attention to task, ability to understand the instructional set, cognitive style, problem-solving ability, frustration tolerance, and excessive motor activity are some of the behaviors worth observing.

Testing should be done without interruption in a relatively quiet environment. Individuals with attention deficits may require rest periods between tests or multiple testing sessions. For a comprehensive visual information processing evaluation, one or two tests from each category can be selected for administration. For a detailed or problem-focused evaluation of a specific visual information processing skill, multiple tests from the same category can be administered.

2. Visual Spatial Orientation Skills

The clinical signs and symptoms of visual spatial orientation skill deficiencies are listed below.

Signs and Symptoms of Visual Spatial Orientation Skill Deficiency

- Delayed development of gross motor skills
- Decreased coordination, balance, and ball-playing skills
- Confusion of right and left
- Letter reversal errors when writing or reading
- Inconsistent directional attack when reading
- Inconsistent dominant handedness
- Difficulty in tasks requiring crossing of the midline

Visual spatial orientation skills can be evaluated by several categories of tests.

h. Bilateral Integration

- Body Knowledge and Control - Standing Test
- Chalkboard Circles Test

i. Laterality and Directionality

- Piaget Right-Left Awareness Test
- Reversals Frequency Test
- Jordan Left-Right Reversal Test – Revised

3. Visual Analysis Skills

Visual analysis skills have traditionally been subdivided into separate theoretical constructs: visual discrimination, visual figure-ground perception, visual closure, visual memory, and visualization.

. Visual Discrimination

The clinical signs and symptoms of visual analysis skill deficiencies are listed below:

Signs and Symptoms of Visual Analysis Skill Deficiency

- Delayed learning of the alphabet (letter identification)
- Poor automatic recognition of words (sight word vocabulary)

- Difficulty performing basic mathematics operations
- Confusion between similar-looking words (apparent letter transpositions)
- Difficulty spelling nonregular words
- Difficulty with classification of objects on the basis of their visual attributes (e.g., shape, size)
- Decreased automatic recognition of likenesses and differences in visual stimuli

Visual discrimination tests involve a match-to-sample paradigm, in which the match may involve variations in stimulus size or orientation. Visual discrimination can be tested with the following:

- Visual Discrimination subtest of the Test of Visual Perceptual Skills - Revised
- Form Constancy subtest of the Test of Visual Perceptual Skills - Revised
- Form Constancy subtest of the Developmental Test of Visual Perception - 2
- Matching Familiar Figures Test
- Visual Discrimination subtest of the Motor Free Vision Perception Test

a. Visual Figure-Ground

Visual figure-ground can be tested with the following:

- Visual Figure-Ground subtest of the Test of Visual Perceptual Skills - Revised
- Figure-Ground subtest of the Developmental Test of Visual Perception - 2
- Figure-Ground subtest of the Motor Free Vision Perception Test
- Figure-Ground Perception subtest of the Southern California Sensory Integration Test

b. Visual Closure

Visual closure can be tested with the following:

- Visual Closure subtest of the Test of Visual Perceptual Skills - Revised
- Visual Closure subtest of the Developmental Test of Visual Perception - 2
- Picture Fragments subtest of the Detroit Test of Learning Aptitude - 3
- Gestalt Closure subtest of the Kaufman - Assessment Battery for Children
- Visual Closure subtest of the Motor Free Vision Perception Test

c. Visual Memory and Visualization

Visual memory can be tested with the following:

- Visual Memory subtest of the Test of Visual Perceptual Skills - Revised
- Visual Sequential Memory subtest of the Test of Visual Perceptual Skills - Revised
- Spatial Memory subtest of the Kaufman - Assessment Battery for Children
- Letter Sequences subtest of the Detroit Test of Learning Aptitude - 2
- Design Sequences subtest of the Detroit Test of Learning Aptitude - 4
- Visual Memory subtest of the Motor Free Vision Perception Test

Visualization can be tested with the:

- Spatial Relations Test of the Primary Mental Abilities

d. Composite Visual Perception Assessment

The revised version of the Motor Free Visual Perception test has been designed to provide a general, overall non-motor visual perception score encompassing visual discrimination, figure-ground, closure, and memory rather than separate categorical scores.

e. Visual-Motor Integration

Visual-motor integration involves three individual processes: visual analysis of the stimulus, fine-motor control (or eye-hand coordination), and visual conceptualization, which includes the integration process itself. Deficits in any one of these processes will influence the overall result. Testing eye-hand coordination is therefore important for a differential diagnosis.

The clinical signs and symptoms of visual-motor integration skill deficiency are listed in below:

Signs and Symptoms of Visual-Motor Skill Deficiency

- Difficulty copying from the chalkboard
- Writing delays, mistakes, confusions
- Letter reversals or transpositions when writing
- Poor spacing and organization of written work
- Misalignment of numbers in columns when doing math problems
- Poorer written spelling than oral spelling
- Poor posture when writing, with or without torticollis
- Exaggerated paper rotation(s) when writing
- Awkward pencil grip

Visual-motor integration can be tested with the following:

- Beery-Buktenica Developmental Test of Visual Motor Integration - 4
- Test of Visual-Motor Skills - Revised
- Wide Range Assessment of Visual Motor Abilities
- Copying Subtest of the Developmental Test of Visual Perception - 2
- Test of Visual Analysis Skills
- Wold Sentence Copy Test

f. Eye-Hand Coordination

The following instruments can test eye-hand coordination:

- Grooved Pegboard Test
- Eye-Hand Coordination subtest of the Developmental Test of Vision Perception – 2

g. Auditory-Visual Integration

The clinical signs and symptoms of auditory-visual integration deficiency are presented below:

Signs and Symptoms of Auditory-Visual Integration Deficiencies

- Difficulty with sound-symbol associations
- Difficulty with spelling
- Slow reading

Auditory-visual integration can be tested with the:

- Auditory-Visual Integration Test

4. Visual-Verbal Integration

Testing of visual-verbal integration usually requires the rapid naming of arrays of visually presented objects or numbers. The clinical signs and symptoms of visual-verbal integration skill deficiency are listed below:

Signs and Symptoms of Visual-Verbal Integration Deficiencies

- Difficulty learning the alphabet (letter identification)
- Difficulty with spelling
- Faulty sight word vocabulary (word recognition)
- Slow reading

Visual-verbal integration can be tested with the following:

- Vertical subtest of the Developmental Eye Movement Test
- Rapid Automatized Naming Test
- Boston Naming Test

E. Supplemental Testing

1. Reading and Spelling

One popular approach is the achievement classification model based on performance in word recognition and spelling tasks. Standardized tests that are available to measure these parameters include:

- Boder Test of Reading-Spelling Patterns
- Dyslexia Determination Test

Analysis of the types of spelling errors made is used to subtype the reading problem into dyseidetic, dysphonetic, or mixed type. Patients of the dyseidetic subtype are characterized by visual information processing deficits, including visual memory and visualization.

These individuals have limited sight word vocabularies and they over-rely on phonetic decoding strategies that interfere with efficient reading. Those of the dysphonetic subtype are characterized by poor understanding and application of phonetic decoding rules. Their visual information processing capacity is relatively strong. However, it is important to note that this reading disability subtype has been associated with magnocellular visual pathway deficits.

2. Magnocellular Pathway

At present no standard clinical tests are readily available to clinicians for the evaluation of magnocellular function. The most promising tests are visual evoked potentials using low-contrast and low-spatial frequency stimuli, and motion detection paradigms.

F. Assessment and Diagnosis

All data obtained from testing should be evaluated to establish one or more clinical diagnoses and to develop a management plan. Examination of the patient history, clinical signs and symptoms, test results and behavioral observations, and review of previous reports and present levels of care are necessary to accomplish this. Low test scores should be referenced to the expected signs and symptoms of that deficiency.

In the analysis of the visual efficiency performance data obtained, it is necessary to examine all of the data collectively by a standard clinical protocol, rather than relying on a single finding to arrive at a diagnosis. The Optometric Clinical Practice Guideline for the Care of the Patient with Accommodative and Vergence Dysfunction (St. Louis [MO]: American Optometric Association; 1997. 89 p. [Optometric clinical practice guideline; no; 18]) provides lists and descriptions of common accommodative and vergence dysfunctions and methods of data analysis.

For testing visual information processing the use of z (or standard) scores is recommended. The z score is the deviation of a specific test score from the mean, expressed in standard deviation units. It allows the expression of any score as a percentile rank by comparing it to a standard normal distribution. A test result with a z score that is >1.5 standard deviations below the mean (percentile rank = 6.68) should definitely be considered anomalous and

clinically significant. Scores falling between 1.0 and 1.5 standard deviations below the mean should be considered suspicious and perhaps clinically relevant, depending on the overall clinical picture, the nature and type of the learning problem, and the level of overall cognitive function.

Parents and school systems often prefer the expression of performance as an age or grade equivalent, or as a percentile rank, to enable direct comparison with expected performance levels. It is important to relate visual information processing test results to the current level of cognitive function as measured by IQ tests such as the Weschler Intelligence Scale for Children - Revised (WISC - R). In the case of individuals with low average IQ scores, overall performance in visual information processing in the same range may not be indicative of a problem, but rather the expected level of performance.

G. Management

The goal of the management of learning related vision problems is to prepare the individual to take full advantage of the opportunities for learning. In most situations, optometric intervention for learning related vision problems is delivered in conjunction with other professionals involved in the management of the learning problem from an educational or medical perspective. Interdisciplinary communication, consultation, and referral are vital for the most effective management of the individual with learning problems.

The management of learning related vision problems should be directed at the identification and treatment of specific visual deficits.

Learning related vision problems are usually managed in a progressive sequence. Treatment should begin with consideration of refractive status. Careful attention should be paid to the correction of hyperopia and anisometropia because of their known association with learning problems.

Next, visual efficiency deficits should be treated aggressively, using lenses, prisms, and vision therapy. The Optometric Clinical Practice Guideline for the Care of the Patient with Accommodative and Vergence Dysfunction (St. Louis [MO]: American Optometric Association; 1997. 89 p. [Optometric clinical practice guideline; no; 18]) offers more detailed management recommendations.

The treatment of vision information processing deficits usually requires vision therapy, which can begin during the later stages of visual efficiency therapy. When deficits in visual efficiency are minor, information processing therapy can be initiated at the outset. The approach is typically hierarchical, beginning with visual spatial orientation, then continuing with visual analysis and concluding with visual-motor integration. Attention should be directed toward improving the rate of visual information processing. Developing intrinsic motivation so that the patient becomes aware of increasing mastery of the skill being acquired is an important part of the therapy program.

Vision therapy is usually conducted in the optometrist's office and home support activities are prescribed. One or two office visits per week for 12 to 24 weeks may be required for uncomplicated cases. Office therapy sessions

usually begin with review of the activities assigned for practice at home. This review should include a demonstration of the procedures and an indication of the level of compliance.

Supportive activities performed at home 4 to 5 days per week for 20 to 30 minutes each time are an important adjunct to office-based therapy, providing continuity of care and enhancing opportunities for practice and mastery of skills. Consistent application of supportive activities at home may reduce the number of office visits required and the potential for regression.

Many vision therapy techniques and procedures available to address visual information processing problems are described in several recommended compilations. Several of these are computer vision therapy programs.

After this initial period of therapy, a re-evaluation should be performed, using the same visual information processing tests employed previously, and an exploration of improvements in clinical signs and symptoms made. An improvement in test performance of at least 1.5 standard errors of measurement is considered clinically significant. Additional therapy may be indicated if clinical signs and symptoms -- although improved -- persist to some degree. When the patient has made sufficient progress, and has achieved the major therapeutic goals for visual information processing skill enhancement and reduction in clinical signs and symptoms, a home-based maintenance program should be recommended. This maintenance program can include practicing a few procedures 2 to 3 times per week for 10 to 15 minutes each time for 3 months.

When underlying neurological problems, cognitive deficits, or emotional disorders are suspected, referral to another health care professional or the educational system may be indicated. Occupational or physical therapy can complement optometric vision therapy when the deficiencies are severe.

H. Parent and Patient Education

Specific communication with the patient's parents or caregivers should occur after the examination to review the test outcomes. This discussion should begin with a review of the chief complaint. An explanation of the nature of the vision problem and its relationship to the presenting signs and symptoms is necessary. The management plan and prognosis should be presented to the patient and parents or caregivers. Communication with education professionals about the diagnosis, proposed management plan, and expected outcomes should be initiated. This should lead to a coordinated effort with the patient's classroom teachers, special education teachers, and therapists. The importance of continuing eye care should be discussed with parents or caregivers. Other education and health care professionals should be informed about the presence and nature of the learning related vision problems and their relationship to extant learning difficulties.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Optometric intervention directed toward improving visual function has been shown to be efficacious. It does not replace conventional educational programming but is a necessary complementary intervention to maximize the learning environment and the effectiveness of pedagogy.

Additional benefits include:

- Improve quality of care for patients with learning related vision problems
- Minimize the adverse effects of learning related vision problems
- Enhance quality of life

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

Clinicians should not rely on this Clinical Guideline alone for patient care and management. Please refer to the references and other sources listed in the original guideline for a more detailed analysis and discussion of research and patient care information.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

American Optometric Association. Care of the patient with learning related vision problems. St. Louis (MO): American Optometric Association; 2000 Jan 1. 60 p. (Optometric clinical practice guideline; no. 20). [141 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2000

GUIDELINE DEVELOPER(S)

American Optometric Association - Professional Association

SOURCE(S) OF FUNDING

Funding was provided by the Vision Service Plan (Rancho Cordova, California) and its frame subsidiary Altaireyewear (Rancho Cordova, California)

GUIDELINE COMMITTEE

American Optometric Association Consensus Panel on the Care of the Patient with Learning Related Vision Problems

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Members: Ralph P. Garzia, O.D., Principal Author; Eric J. Borsting, O.D.; Steven B. Nicholson, O.D.; Leonard J. Press, O.D.; Mitchell M. Scheiman, O.D.; Harold A. Solan, O.D.

AOA Clinical Guidelines Coordinating Committee Members: John F. Amos, O.D., M.S. (Chair); Thomas L. Lewis, O.D., Ph.D.; Stephen C. Miller, O.D.

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

According to the guideline developer, this guideline has been reviewed on a biannual basis and is considered to be current. This review process involves updated literature searches of electronic databases and expert panel review of new evidence that has emerged since the original publication date.

An update is not in progress at this time.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the American Optometric Association (AOA) Web site.

Print copies: Available for purchase from the American Optometric Association (AOA), Order Department, 243 North Lindbergh Boulevard, St. Louis, MO 63141; Telephone (800) 262-2210 (U.S. only).

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on March 1, 2001. It was verified by the guideline developer as of May 16, 2001.

COPYRIGHT STATEMENT

Date Modified: 11/8/2004


FIRSTGOV